

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
Phase II Support For Price Cap Areas	)	DA 13-162
Outside the Contiguous United States	)	

**COMMENTS OF ALASKA COMMUNICATIONS SYSTEMS**

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**COMMENTS OF ALASKA COMMUNICATIONS SYSTEMS**

Alaska Communications Systems (“ACS”)<sup>1</sup> hereby submits these comments in response to the Public Notice (“Public Notice”)<sup>2</sup> issued by the Wireline Competition Bureau (the “Bureau”) in the above-captioned proceeding seeking comments on issues relating to Connect America Fund (“CAF”) Phase II support for price cap carriers serving areas outside the lower 48 contiguous United States (“non-CONUS”).<sup>3</sup>

**I. Introduction and Summary**

In these comments, ACS urges the Commission (1) to increase CAF Phase II support for the non-CONUS carriers, such as ACS, that face high costs of deploying broadband that are not captured in the Commission’s Connect America Cost Model (“CACM”); (2) to ensure a baseline level of support for the non-CONUS carriers that, at a minimum, reflects the overall increase in high cost support for price cap carriers

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<sup>1</sup> In these comments, “Alaska Communications Systems” signifies the incumbent local exchange carrier (“ILEC”) subsidiaries of Alaska Communications Systems Group, Inc., which include ACS of Alaska, LLC, ACS of Anchorage, LLC, ACS of Fairbanks, LLC, and ACS of the Northland, LLC.

<sup>2</sup> *Connect America Fund*, WC Docket No. 10-90, Public Notice, “Wireline Competition Bureau Seeks Comment on Connect America Phase II Support for Price Cap Areas Outside of the Contiguous United States,” DA 13-162 (Wir. Comp. Bur., rel. Feb. 8, 2013) (“Public Notice”).

<sup>3</sup> Five price cap carriers serve areas outside the contiguous United States: ACS, Hawaiian Telcom, Puerto Rico Telephone Company (“PRTC”), Virgin Islands Telephone Corporation (“Vitelco”), and Micronesian Telecommunications. References in these comments to the “non-CONUS carriers” indicate these carriers collectively.

reflected in the *Transformation Order*<sup>4</sup> as well as the high cost of deploying broadband facilities necessary to meet the service commitments required under CAF Phase II; (3) to allocate such non-CONUS carrier support based on criteria that measure disparities in the costs of building and operating broadband facilities among their service areas; (4) to ensure that broadband obligations are tied to support levels, and provide additional time for carriers, such as ACS, that face unique deployment challenges, to meet the CAF Phase II service mandates; and (5) to complete the process of determining support levels under CAF Phase II for *all* price cap carriers concurrently, so that all may move to CAF Phase II together.

## **II. The Commission Should Increase CAF Phase II Support for Areas Outside the Contiguous United States**

ACS appreciates the Commission's recognition that costs in non-contiguous areas of the nation may differ, both in amount and kind, from those prevailing in the contiguous states. These challenges are manifest in figures showing that broadband penetration in Alaska is the lowest in the nation. This gap stems in significant part, from the fact that Alaska has been historically underfunded from high cost support mechanisms, depriving the state's carriers of the capital they need to invest in the facilities needed to deliver affordable broadband services throughout the state.

The Public Notice seeks comment generally on two approaches to determining CAF Phase II support levels for areas outside the contiguous United States:

(1) modifying the CACM to incorporate aspects of models submitted by ACS and PRTC;

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<sup>4</sup> *Connect America Fund*, WC Docket No. 10-90, Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, 26 FCC Rcd 17663 (2011) ("*Transformation Order*").

or (2) maintaining existing support levels, for example by taking carriers serving these areas out of the CACM.<sup>5</sup> In 2011, according to the Public Notice, disbursements to the non-CONUS carriers totaled approximately \$76 million,<sup>6</sup> with ACS receiving approximately \$19.5 million of that total. ACS believes that the Commission should dedicate a portion of the \$1.8 billion it has budgeted for CAF Phase II funding to the non-CONUS price cap carriers, and ensure that the portion is at least equal to the overall 67 percent increase in high cost funding for price cap carriers, so that the non-CONUS carriers, in the aggregate, would receive at least \$127 million under CAF Phase II.

**A. The Commission Should Ensure That the Portion of the CAF Phase II Fund Received By the Non-CONUS Carriers Reflects the High Cost of the Required Broadband Service Commitments and Increased Budget for High Cost Support**

ACS urges the Commission to adopt aggregate CAF Phase II support levels for non-CONUS carriers that at least reflect the overall increase the Commission has adopted for CAF Phase II funding generally. In the *Transformation Order*, the Commission concluded that, “increased support to areas served by price cap carriers, coupled with rigorous, enforceable deployment obligations, is warranted in the near term to meet our universal service mandate to unserved consumers residing in these communities.”<sup>7</sup> As the Commission thereby recognized in the *Transformation Order*,<sup>8</sup> ACS, like other price cap carriers, would face significant increases in its costs of service to deploy, operate, and maintain the facilities necessary to deliver broadband meeting the Commission’s CAF

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<sup>5</sup> Public Notice at ¶ 6.

<sup>6</sup> *Id.* at ¶ 3, n.7.

<sup>7</sup> *Transformation Order* at ¶ 159.

<sup>8</sup> *Id.* at ¶ 193.

Phase II standards throughout its service area covered by CAF Phase II support. ACS would be unable to meet these service commitments based on its current level of legacy support, let alone the sharply reduced levels of support currently suggested by recent CACM model results.

Attempting to provide high cost universal service support that accommodates the increased costs to carriers of meeting its broadband deployment mandates, the Commission has established a budget for CAF Phase II of \$1.8 billion, representing approximately a 67 percent increase over the \$1.076 billion in high cost funding that flowed to price cap carriers in 2010.<sup>9</sup> As ACS has discussed at length in this proceeding, in many cases, non-CONUS carriers face even greater challenges and higher costs in meeting the Commission's CAF Phase II broadband deployment mandates than those facing carriers that serve the contiguous United States.

In light of the unique challenges that raise these carriers' costs, it would defy reason for the Bureau to require them to meet the Commission's CAF Phase II service mandates based only on their historical levels of legacy high cost support, let alone a decrease in support as projected by the CACM for ACS. The Commission established that legacy support to enable affordable and reasonably comparable voice service.<sup>10</sup> ACS has demonstrated that support cannot decline or simply remain at historic levels if the Commission's broadband goals are to be achieved. ACS cannot expand broadband into unserved areas without an increase of support. Redirecting current support to broadband

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<sup>9</sup> *Id.* at ¶ 158.

<sup>10</sup> Federal Communications Commission, Omnibus Broadband Initiative, *Connecting America: The National Broadband Plan*, (2010), at 141.

will cause shortfalls elsewhere, particularly coming at the same time that ACS and other price cap carriers are phasing out inter-carrier charges for the use of their networks. And maintaining frozen support without additional amounts for broadband will perpetuate large gaps in broadband availability for Alaska customers that will not be filled by the Remote Areas Fund (“RAF”).

Instead, the Bureau should commit to setting the level of support for non-CONUS price cap carriers, in the aggregate, so that it increases over the amount these carriers received from legacy high cost support at least by an amount that is proportional to the overall growth in high-cost support for price cap carriers, from \$76 million to roughly \$127 million. By doing so, the Bureau can ensure that ACS, and the other non-CONUS carriers, have access to the support that is absolutely critical to permit them to deliver broadband meeting the Commission’s CAF Phase II policy goals within their respective service areas.

**B. Support for the Non-CONUS Carriers Should Be Allocated Based on Criteria Reflecting Cost Disparities**

In the Public Notice, the Bureau seeks comment on options for allocating CAF Phase II support among carriers serving areas outside the contiguous United States, including the option of maintaining support for these carriers at existing levels.<sup>11</sup> As ACS has explained in these and other comments filed in this proceeding, it cannot meet the Commission’s CAF Phase II broadband deployment goals unless the Commission provides a substantial increase to its historical level of legacy high cost support. Conversely, in areas where high-cost support is withdrawn, obligations to provide voice and broadband services upon request also should be phased out.

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<sup>11</sup> Public Notice at ¶ 8.

While the Commission cites previous ACS filings supporting the option of “provid[ing] these carriers with their current frozen and incremental CAF Phase I support in lieu of support based on a model,” ACS never took the position that it could deploy broadband based on these amounts alone. If the Bureau does not intend to increase support to ACS, the Bureau or the Commission would need to suspend the CAF Phase II broadband deployment mandates applicable to such support.<sup>12</sup> In light of the Commission’s judgment that broadband availability is necessary to universal service in this country, however, the Bureau must ensure that support is sufficient for this purpose.

If the Bureau establishes a dedicated portion of the CAF Phase II support mechanism for carriers serving areas outside the contiguous United States, it should allocate these funds among the non-CONUS carriers based on tangible demonstrations of need, predicated on specific cost-based differentiation criteria. If the Commission were simply to maintain each carrier’s legacy support level, it would abdicate its responsibility to examine whether those support levels are, on the one hand, necessary to meet the Commission’s CAF Phase II broadband deployment goals and, on the other hand, adequate to meet the requirements of Section 254 to provide support that is specific, predictable, and sufficient to enable reasonable comparability of services and prices among urban and high cost areas.<sup>13</sup>

ACS believes that an objective evaluation of such criteria will demonstrate that ACS should receive the largest share of any CAF Phase II funding made available to carriers serving areas outside the contiguous United States. Of the roughly \$76 million in

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<sup>12</sup> Public Notice at ¶ 11, n.23.

<sup>13</sup> 47 U.S.C. § 254(b).



legacy high cost support that flowed to the non-CONUS carriers in 2011, ACS received only approximately \$19.5 million. In light of the costs of deployment in Alaska, discussed below and in many of ACS's previous comments, as well as the current extent of ACS's broadband facilities, ACS will need a multi-fold increase in this level of funding, sustained over the next 10 years, to meet the Commission's CAF Phase II broadband deployment goals. If the Commission, on the other hand, were to maintain legacy high cost support levels, ACS simply could not begin to meet any of the Commission's CAF Phase II broadband deployment goals.

To establish the level of this cost disparity, the Commission should either (1) identify examine cost-based criteria that define the cost differences among the non-CONUS carriers; or (2) modify the CACM so that it accurately reflects the cost disparities among the ACS ILECs, the other non-CONUS carriers, and those serving the contiguous United States. ACS discusses both options below.

**1. The Commission Should Allocate Support Among Non-CONUS Carriers based on Factors that Illustrate Cost Differences Among Them**

In this section of its comments, ACS discusses some of the possible cost-based criteria on which the Commission might choose to rely in allocating CAF Phase II support among the carriers serving areas outside the contiguous United States.

**(a) Intrastate Transport Costs**

Alaska is by far the largest state in the nation by a considerable margin, covering over 570,000 square miles, meaning Alaska contains nearly one sixth of the nation's entire land area. It is spread across an area roughly as wide as the entire contiguous United States, despite one of the lowest state populations in the nation, at just over

700,000, according to figures from the U.S. Census Bureau.<sup>14</sup> As discussed above, because of its forbidding climate and topography, Alaska faces a dearth of terrestrial transport facilities and unique challenges in deploying the additional facilities that would be necessary to handle the increased load created by broadband. Alaska's extreme northern location presents challenges even for satellite-based transport options.

In addition, despite its large size, Alaska is connected to the contiguous United States only by undersea cables landing in or near Anchorage. Because Alaska lacks an in-state Internet access point, there is no option other than to aggregate all broadband traffic originating or terminating within the state in Anchorage, where it may join these cables.

These facts raise ACS's costs of intrastate transport far above those demonstrated to date by any other CONUS or non-CONUS price cap LEC. For this reason alone, ACS believes that it should receive the largest share of any CAF Phase II funding made available to carriers serving areas outside the contiguous United States.

#### **(b) Line Density**

Among the non-CONUS price cap carriers, ACS has the lowest line density, expressed as lines per square mile, based on the following estimates:

<b>Carrier</b>	<b>Approximate Service Area (Square Miles)</b>	<b>Lines (2011)</b>	<b>Lines per square mile</b>
Vitelco	130	55,694	428
PRTC	3450	890,447	258
Micronesian Telecommunications	120	15,685	131
Hawaiian Telcom	6500	397,962	61
ACS (excluding unpopulated census blocks)	6840	142,974	21

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<sup>14</sup> See Alaska QuickFacts, available at: <http://quickfacts.census.gov/qfd/states/02000.html> (visited March 8, 2013).

Low line density further compounds the challenges and raises the costs of deploying broadband. It prevents ACS from achieving the economies of scale and scope in deploying broadband that are available to other carriers. ACS central offices serve anywhere from 12 to 23,000 households, but 75 percent of its local serving areas serve fewer than 1,000 households. Central office equipment necessary for broadband, such as DSLAMs, therefore, serve only a limited number of customers that is often well below their maximum capacity. Loops must be shortened, for example by deploying network nodes and augmenting feeder plant, whether copper or fiber, to reach small customer clusters. The prohibitive costs of intrastate transport also increase the costs of switching by making the use of soft switches in many locations cost-prohibitive.

While the Commission has not yet announced the precise boundaries of the areas that will be within the CAF Phase II mechanism, the facial disparity in line density between ACS and Hawaiian Telcom, on the one hand, and PRTC and Vitelco on the other, reveal striking differences that should inform the respective needs of each carrier for CAF Phase II support to meet the Commission's broadband deployment goals.

**(c) Labor Costs**

As indicated above, ACS faces extremely high costs for skilled technician labor required to deploy broadband network facilities. As compared to the U.S. as a whole, statistics from the Alaska Department of Labor and Workforce Development indicate that mean 2011 wages for "Telecommunications Equipment Installers and Repairers, Except Line Installers," Standard Occupation Code ("SOC") 49-2022, were *more than 17*

*percent higher in Alaska* than they are in the United States overall.<sup>15</sup> The disparity for “Telecommunications Line Installers and Repairers,” SOC 49-9052, is even more pronounced, showing that 2011 wages were *more than 22 percent higher in Alaska* than the national average.<sup>16</sup>

Three primary factors drive these costs. *First*, Alaska’s climate creates a uniquely short construction season during which it may engage in large-scale deployment of broadband facilities. During the vast majority of the year, such construction is impossible as a result of risks arising from cold, dark, and hazardous weather conditions. As a result, in order to maximize its use of the brief summer season when construction is possible and days are long, ACS must pay premium overtime rates to achieve its deployment goals.

*Second*, Alaska’s pool of qualified network technicians is not large. Alaska has a small population, and the short construction season, described above, means that many qualified technicians prefer to work in areas where they can work year-round. These limitations further exacerbate supply problems during the short construction season, as ACS must compete with other providers needing similar skill sets, for the services of qualified workers, further driving up labor costs.

*Third*, the cost of living in Alaska is high. The cost of transporting virtually all needed goods to Alaska, and distributing them across the state, means that many

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<sup>15</sup> Source: State of Alaska, Dept. of Labor and Workforce Development, showing 2011 Alaska mean hourly wage of \$29.81, compared with \$25.42 nationwide, *available at*: <http://live.laborstats.alaska.gov/occ/occ.cfm?o=492022>.

<sup>16</sup> Source: State of Alaska, Dept. of Labor and Workforce Development, showing 2011 Alaska mean hourly wage of \$30.19, compared with \$24.68 nationwide, *available at*: <http://live.laborstats.alaska.gov/occ/occ.cfm?o=499052>.

consumer prices far exceed those for comparable items in the contiguous states. The University of Alaska Fairbanks calculates that food for a family of four for a week, calculated to cost \$115.62 in Portland, Oregon, would cost \$146.62 in Anchorage, and range upwards of \$300.00 in many of the more remote Alaskan communities.<sup>17</sup> A gallon of milk can cost \$10.00 or more in Alaska bush villages. According to the Alaska Department of Labor and Workforce Development, energy costs nearly 20 percent more in Anchorage than the U.S. average.<sup>18</sup> For example, coupled with the extreme climate, it can cost more than \$7,000 per year to heat a home in Fairbanks.

**(d) Costs of Transport to the Nearest Internet Access Point**

In addition to these other challenges, Alaska has no in-state Internet access point and must route its broadband traffic across thousands of miles of open ocean to the nearest such points in Oregon and Washington state. In this regard, it is unique among the price cap carriers serving areas outside the contiguous United States.<sup>19</sup> Further, unlike the other non-CONUS carriers, Alaska is not on the way to any other locations, so the cost of these facilities cannot be shared with other traffic transiting an insular area on its way to Europe, Asia, or other global points.

Unique among the non-CONUS carriers, Alaska has no Internet access point within its borders, and the nearest ones are many thousands of miles away in Portland,

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<sup>17</sup> University of Alaska Fairbanks, “Cooperative Extension Service Food Cost Survey” (March 2012), *available at*: <http://www.uaf.edu/files/ces/fcs/2012q1data.pdf>.

<sup>18</sup> Neal Fried, “The Cost of Living in Alaska; Energy Prices a Large Part of 2011’s Rise in Inflation,” *Alaska Economic Trends* (State of Alaska, Dept. of Labor and Workforce Development, July 2012), at 4 (*available at*: <http://laborstats.alaska.gov/col/col.pdf>).

<sup>19</sup> As Hawaiian Telecom explains in its Comments, at 17, it has redundant peering points, one in the U.S. and one in Honolulu.

Oregon (Northwest Access Exchange<sup>20</sup>) and Seattle, Washington (Seattle Internet Exchange<sup>21</sup>), of which ACS is a member of each. To reach these points, ACS faces limited undersea cable connectivity options. Alaska is connected to the contiguous United States only by one set of undersea cables it owns, and one set owned by its primary Alaskan competitor, GCI.

While there is an Internet access point in Hawaii, the Hawaii Internet eXchange,<sup>22</sup> peering there is far more costly than it is in the contiguous states. Hawaiian Telcom faces similarly constrained alternatives for undersea cable transport to reach the contiguous United States, and must rely on one of three existing undersea cables covering that route.<sup>23</sup> Unlike the cables serving Alaska, however, these cables also carry traffic bound for Japan, China, and other points in Asia, as well as Australia.

PRTC, in contrast, has access both to a local, federally subsidized Internet access point, and ample competition for undersea cable connectivity to the contiguous United States. The National Telecommunications and Information Administration (“NTIA”)

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<sup>20</sup> See <http://www.nwax.net/>.

<sup>21</sup> See <http://www.seattleix.net/>.

<sup>22</sup> See [http://www.hawaii.edu/hix/Hawaii\\_Internet\\_Exchange/Home.html](http://www.hawaii.edu/hix/Hawaii_Internet_Exchange/Home.html).

<sup>23</sup> Source: TeleGeography ([www.submarinecablemap.com](http://www.submarinecablemap.com)), showing existing connections between Hawaii and the contiguous United States over the **Southern Cross Cable Network** (owned by Telecom New Zealand, SingTel Optus, Verizon Business); **Japan-US Cable Network (JUS)** (owned by Verizon Business, REACH, AT&T, BT, Sprint, CenturyLink, KDDI, NTT, Chunghwa, Tata Communications, SingTel, Telekom Malaysia, Softbank Telecom, France Telecom, Level 3, AboveNet, SK Broadband, KT, China Telecom, China Unicom, LG Uplus, New World Telecom, Starhub, PCCW, Telstra, Vodafone); and **Asia-America Gateway (AAG)** (owned by Telekom Malaysia, AT&T, Starhub, PLDT, Communications Authority of Thailand, airtel (Bharti), Telstra, Telkom Indonesia, BT, Eastern Telecom, PT Indonesia Satellite Corp., Telecom New Zealand, Viettel Corporation, Saigon Postal Corporation, Vietnam Telecom International, Brunei International Gateway, BayanTel (BTI)).

recently awarded more than \$25 million in federal grant funds under the Broadband Technology Opportunities Program (“BTOP”) to Critical Hub Networks, Inc. (“Critical Hub”), for its “Puerto Rico Bridge Initiative” to open a new Internet access point in San Juan, Puerto Rico.<sup>24</sup> As explained by Critical Hub, the Puerto Rico Bridge Initiative is “Puerto Rico’s federally-sponsored Internet Exchange IXP, facilitating the interconnection of Puerto Rico’s broadband providers and the island’s Internet national security in the event of an interruption in off-island communications.”<sup>25</sup> Moreover, Puerto Rico is connected to the contiguous United States by no fewer than four different undersea cable systems operated by some of the world’s largest telecommunications carriers, with a fifth cable planned to begin operation in 2014,<sup>26</sup> as well as three others that connect Puerto Rico to non-U.S. points around the globe.

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<sup>24</sup> See BTOP Fact Sheet, Critical Hub Networks, Inc. (stating that the Puerto Rico Bridge Initiative will “[e]stablish a local peering point to keep Puerto Rico-bound Internet traffic on the islands, thus reducing associated transit costs and lowering broadband costs generally”), available at: [http://www2.ntia.doc.gov/files/grantees/critical\\_hub\\_fs\\_0.pdf](http://www2.ntia.doc.gov/files/grantees/critical_hub_fs_0.pdf) (visited March 8, 2013).

<sup>25</sup> Critical Hub Networks: Home of the PRBI, “Network Connectivity,” available at: <http://www.caribe.net/connectivity.html> (visited March 8, 2013).

<sup>26</sup> Source: TeleGeography ([www.submarinecablemap.com](http://www.submarinecablemap.com)), showing existing or planned connections between Puerto Rico and the contiguous United States over the **South America-1 (SAm-1) cable** (owned by Telefonica); **ARCOS** (owned by Columbus Networks, Axtel, CANTV, Codetel, Hondutel, Belize Telemedia, Enitel, AT&T, Alestra, Verizon Business, RACSA, United Telecommunication Services (UTS), Telecarrier, Tricom USA, Telecomunicaciones Ultramarinas de Puerto Rico, Internexa, Orbinet Overseas, Telepuerto San Isidro, Bahamas Telecommunications Company); **America Movil Submarine Cable System-1 (AMX-1)** (owned by America Movil; due to commence operation in 3Q2013); **Americas-II** (owned by Embratel, AT&T, Verizon Business, Sprint, CANTV, Tata Communications, Entel Chile, Level 3, Centennial of Puerto Rico, Corporacion Nacional de Telecomunicaciones, Telecom Argentina, France Telecom, Portugal Telecom); and the **Pacific Caribbean Cable System (PCCS)** (owned by Cable & Wireless Communications, Telconet, Telefonica, Setar, United Telecommunication Services (UTS); due to commence operation in 3Q2014)).

Because the Global Caribbean Network (GCN) undersea cable system connects the Virgin Islands directly to Puerto Rico, which is located less than 50 miles away, Vitelco also benefits from the presence of the federally subsidized Puerto Rico Bridge Internet access point, as well as the numerous undersea cables reaching U.S. and global points. In addition, the Virgin Islands enjoys a direct connection to the contiguous United States over the Mid Atlantic Crossing (MAC) undersea cable, owned by Level 3.<sup>27</sup>

**2. The Commission Should Modify the CACM so that it Accurately Reflects ACS's Costs**

In the Public Notice, the Bureau seeks comment on the specific changes that would need to be made, or data that would need to be incorporated, to modify the current version of the CACM to reflect costs that carriers serving areas outside the contiguous United States face.<sup>28</sup> As the Commission observes, ACS has been active in evaluating the shortcomings of the CACM and its predecessor, the CQBAT model, as it applies to Alaska.<sup>29</sup> In general, ACS has found that these models suffer from two primary shortcomings, as they relate to Alaska.

*First*, the models omit significant, unavoidable costs of delivering broadband services in Alaska. There is no Internet access point in Alaska, meaning that all broadband traffic must be routed to the nearest Internet access points located in the lower 48 states, in Oregon and Washington state. Because the only undersea cables connecting

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<sup>27</sup> Source: TeleGeography ([www.submarinecablemap.com](http://www.submarinecablemap.com)). The Commonwealth of the Northern Mariana Islands also appears to be well served by trans-Pacific and other submarine cables connecting to Hawaii, the mainland United States, Asia, and Australia. Because of its proximity to Asia, however, ACS has little information about how broadband Internet traffic leaving the islands is routed.

<sup>28</sup> Public Notice at ¶ 8.

<sup>29</sup> Public Notice at ¶ 5.



Alaska to the lower 48 states land in or near Anchorage, broadband traffic originating or terminating throughout Alaska must therefore first be transported to Anchorage. The costs of such transport are high. A forbidding combination of rugged terrain, hostile climate, low population density, and Alaska's northern geographic location make transport facilities scarce, and prevent ACS from achieving the economies of scale available to carriers in the contiguous United States. Terrestrial transport facilities are scarce, and microwave, rather than fiber, facilities are common, particularly where bodies of water or other topographic barriers make fiber cost-prohibitive. Access to commercial power is not universal. And, maintenance and repair calls that could be accomplished in hours in the contiguous United States may consume days or weeks in Alaska, requiring travel by airplane, boat, barge, all-terrain vehicle, or snow machine to locations that are inaccessible by road, when weather permits access at all.

In February 2012, ACS submitted a model designed to capture the costs of these Alaska-specific satellite, microwave, and undersea cable transport costs, which the Commission's existing model does not reflect.<sup>30</sup> Unfortunately, despite filing this information and more than a year of subsequent, strenuous advocacy, ACS can detect few if any changes that the Commission has made to incorporate any Alaska-specific costs into the CACM or to examine the results that these changes may produce in the model's results.

In addition to these costs, ACS has also undertaken an ongoing effort to model other Alaska-specific differences in broadband costs, including the increased costs of

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<sup>30</sup> See *Connect America Fund*, WC Docket No. 10-90, Letter from Karen Brinkmann, Counsel for ACS, to Marlene H. Dortch, Secretary, FCC (filed Feb. 13, 2012), and materials attached thereto.

loop and fiber transport, central office equipment, and installation and maintenance of broadband facilities, as well as Alaska-specific differences in labor costs. For example, as ACS has explained elsewhere in this proceeding, the costs of fiber and other network equipment are higher in Alaska, at a minimum as a result of the increased costs of transporting the equipment to Anchorage and then distributing it from there across the state to the locations where it is needed.<sup>31</sup> In addition, Alaska's cold climate means that fiber optic cable must be buried at a greater depth in Alaska than is required in the lower 48 states, in order to safeguard against damage from freezing temperatures. The limited capacity and high cost of intrastate transport connectivity in many cases makes the use of soft switches cost-prohibitive even as, at the same time, the manufacturer has announced that it will soon cease supporting the aging array of Nortel DMS-10 switches that today play a leading role in ACS's delivery of voice service across many parts of Alaska. And, ACS must pay premium labor rates, as well as premium overtime rates, to achieve its deployment goals within the practical constraints imposed by Alaska's small workforce of qualified technicians and uniquely short construction season.<sup>32</sup>

While the Commission observes that, "ACS has not provided further information regarding these other cost variables that it contends should be modified,"<sup>33</sup> the Commission heretofore has made no visible effort to incorporate into the modeling effort

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<sup>31</sup> See *Connect America Fund*, WC Docket No. 10-90, Comments of Alaska Communications Systems (filed Jan. 28, 2013), at 16-17.

<sup>32</sup> See Alaska Communications Systems, CAF II Model, FCC Workshop (Sept. 13-14, 2012), available at: [http://transition.fcc.gov/wcb/tapd/universal\\_service/caf/CAF2-Alaska.pdf](http://transition.fcc.gov/wcb/tapd/universal_service/caf/CAF2-Alaska.pdf) (attached as Exhibit A, hereto).

<sup>33</sup> Public Notice at ¶ 5, n.12.

even the portion of Alaska cost information that ACS has provided. Nevertheless, ACS is working diligently to complete its modeling of these costs, and intends to present them to the Commission for consideration as quickly as possible. Once that work is complete, ACS is confident that the CACM can reflect CAF Phase II support for Alaska that is substantially above the level legacy support ACS receives today.

*Second*, ACS believes that, before the Commission may properly use the CACM to establish CAF Phase II support levels for price cap carriers, it should follow a fully open and transparent process, allowing affected carriers and interested members of the public alike to examine and evaluate the operation of the CACM. Absent such a process, it is impossible for ACS or others to evaluate whether the model's algorithms correctly predict the amount and type of facilities necessary to deliver broadband that meets the Commission's CAF Phase II voice and broadband mandates in Alaska. Unfortunately, these aspects of the model are proprietary to CostQuest and, as a result, ACS has been unable to evaluate the operation of the model in detail.

Nevertheless, it is apparent on its face that the CACM model is deficient as applied to Alaska. The Commission itself has acknowledged that most of Alaska is a high-cost, low density market that is unserved or underserved by broadband, and has directed "the Wireline Competition Bureau to consider the unique circumstances of these areas when adopting a cost model, and . . . to consider whether the model ultimately adopted adequately accounts for the costs faced by carriers serving these areas."<sup>34</sup> Yet, despite the fact that CAF Phase II grows high cost support for all price cap carriers in the

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<sup>34</sup> *Transformation Order* at ¶ 193.

aggregate by 67 percent from 2011 levels, the CACM would precipitously shrink such support for ACS, by nearly three-quarters in some iterations. On its face, therefore, the CACM produces an unreasonable outcome for Alaska, despite widespread acknowledgment that it is a high-cost and underserved area.<sup>35</sup> While a portion of this outcome undoubtedly stems from the input defects, discussed above, it also may stem from issues within the model algorithms themselves.

**III. The Commission’s Timeline for Implementing CAF Phase II Support for Non-CONUS Carriers Should Maximize These Carriers’ Ability to Meet the Commission’s Broadband Deployment Goals**

The Bureau’s Public Notice seeks comment on timing issues related to the transition to CAF Phase II for non-CONUS carriers.<sup>36</sup> ACS believes that, to maximize the opportunity for these carriers to meet the Commission’s broadband deployment objectives, the Bureau should complete its work to establish support levels for these carriers quickly, such that all price cap carriers may undergo the transition to the CAF Phase II mechanism together at the same time; and should tailor the service obligations for non-CONUS price cap carriers to reflect the unique challenges each faces.

**A. All Price Cap Carriers Should Complete the Transition to CAF Phase II Together**

The National Broadband Plan and the Commission’s *Transformation Order* establish ambitious broadband deployment goals for the nation. In the *Transformation*

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<sup>35</sup> See, e.g., FCC Omnibus Broadband Initiative, “The Broadband Availability Gap,” OBI Technical Paper No. 1 (April 2010), at 12 (“*OBI Broadband Availability Gap*”) (released as Appendix C to *Connect America Fund*, WC Docket No. 10-90, Notice of Inquiry and Notice of Proposed Rulemaking, FCC 10-58, 25 FCC Rcd 6657 (2010)).

<sup>36</sup> Public Notice at ¶ 10.

*Order*, the Commission stated that carriers accepting CAF Phase II support must commit to deploy broadband as follows:

By the end of the third year, ETCs must offer at least 4 Mbps/1 Mbps broadband service to at least 85 percent of their high-cost locations – including locations on Tribal lands – covered by the state-level commitment, as described below. By the end of the fifth year, price cap ETCs must offer at least 4 Mbps/1 Mbps broadband service to all supported locations, and at least 6 Mbps/1.5 Mbps to a number of supported locations to be specified.<sup>37</sup>

It is vital that the non-CONUS carriers, in particular, begin moving as quickly as possible to achieve this Commission goal of universal broadband. According to the latest Commission data, broadband service availability in Alaska, in particular, lags the rest of the nation, with the lowest level of broadband availability for any state or territory where the Commission has published statistics.<sup>38</sup> To catch up, ACS is eager to begin work as quickly as possible after the Commission provides the necessary universal service support.

Therefore, if the Commission determines to establish a portion of the CAF Phase II support funding that will be dedicated to carriers serving areas outside of the contiguous United States, ACS urges the Commission to complete the work necessary, not only to establish this mechanism, but to allocate and distribute the funding among the affected carriers, on the same time line as it adopts for other price cap carriers. Only by making the transition to CAF Phase II for all price cap carriers together can the

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<sup>37</sup> *Transformation Order* at ¶ 160.

<sup>38</sup> Industry Analysis and Technology Div., Wir. Comp. Bur., *Internet Access Services: Status as of December 31, 2011* (rel. February 2013), at Table 22 (available at: [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db0213/DOC-318810A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0213/DOC-318810A1.pdf)).

Commission ensure that the amount of CAF Phase II funding it chooses to dedicate to the needs of non-CONUS carriers is, in fact, sufficient to enable them to meet the Commission's CAF Phase II broadband deployment commitments.

ACS is concerned that, if the Commission instead defers implementation of the CAF Phase II mechanism for the price cap carriers serving these non-CONUS areas, it will delay, by a year or more, the broadband deployment benefits of the new mechanism for these areas, which today are already among the furthest behind in broadband availability and adoption. Further, should the dedicated portion of the CAF Phase II budget prove insufficient to enable the non-CONUS carriers to meet the CAF Phase II broadband buildout requirements, the Commission would be faced with the dilemma whether to exceed the \$1.8 billion CAF Phase II budget, or to reduce support previously provided to other carriers.

**B. ACS Needs Additional Time and Flexibility to Comply with the Commission's CAF Phase II Broadband Deployment Commitments**

In the Public Notice, the Bureau seeks comment on whether the service obligations associated with CAF Phase II support should be adjusted for price cap carriers serving areas outside the contiguous United States.<sup>39</sup> As summarized above, the aggressive broadband deployment mandates of the *Transformation Order* require carriers accepting CAF Phase II support to deploy 4/1 broadband service to at least 85 percent of their high-cost locations within the state within three years, and to all supported locations

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<sup>39</sup> Public Notice at ¶ 14.

within by the end of the fifth year, in addition to 6/1.5 broadband service to a number of supported locations to be specified.<sup>40</sup>

**1. ACS Will Need Ten Years of Support to Achieve the Commission's CAF Phase II Broadband Availability Requirements**

For the reasons already discussed in these comments, the Commission should grant additional flexibility to ACS in making and meeting this commitment. ACS believe that it will need ten years of support, rather than the five currently provided under the Commission's rules, to meet the broadband availability requirements of the Commission's CAF Phase II rules. This is so for three reasons. *First*, unlike other areas of the nation, in Alaska, ACS faces a short construction season, such that it may only pursue large-scale broadband deployment projects during approximately two months of the year. No other price cap carrier in the nation faces these constraints throughout its entire service area. Delivery or project execution delays that, in other areas would be create only minor disruptions, can derail a project for an entire year in Alaska. Further, as indicated by the Commission's statistics, broadband availability in Alaska lags the rest of the nation, meaning that ACS has a greater amount of work to do to meet the Commission's CAF Phase II milestones.

*Second*, ACS will need support, not just for construction, but also for operating and maintaining its broadband facilities. Given that ACS cannot achieve the economies of scale available to carriers serving areas in the contiguous United States, ACS will need to devote a considerable share of its CAF Phase II support to the ongoing costs of

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<sup>40</sup> *Transformation Order* at ¶ 160.

operating and maintaining this equipment, leaving only a portion available for deployment of new facilities. Indeed, the Commission's *OBI Broadband Availability Gap* Technical Paper shows Alaska as among the states that will need the most ongoing support for each housing unit per month, defined as "the monthly annuity required per unserved housing unit to offset ongoing losses (i.e., the amount by which ongoing costs exceed revenues, assuming the network build out is fully subsidized)."<sup>41</sup>

*Third*, the five-year commitment provided in the Commission's rules creates a disincentive to invest, particularly in Alaska. In areas like Alaska, where there are relatively few subscribers from which to recover the cost of deploying, operating, and maintaining broadband equipment, ACS will require a longer period of time recover these investments from its customers. Uncertainty about whether ACS will be able to recover the remaining portion of the investment, and operating and maintenance costs it will incur, following the expiration of a five-year commitment creates substantial hurdles to ACS's participation in CAF Phase II.

**2. ACS Should Be Permitted to Make the CAF Phase II Commitment on a Study Area Basis, instead of Statewide**

As ACS explained in its recent comments on implementation of the CAF Phase II election process, the Commission should permit ACS to make its CAF Phase II election on a study-area specific basis, instead of statewide. The four ACS ILECs serve six study areas in Alaska, five of them rural, and each with widely differing cost characteristics, network architectures, and broadband availability and penetration. The analysis of whether CAF Phase II support is sufficient to enable ACS to meet the Commission's

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<sup>41</sup> *OBI Broadband Availability Gap* at 10-11.



broadband deployment mandates in each of them is likely to be very different, and it is possible, even likely, that ACS may not be able to reach a uniform answer. Even if the four ACS ILECs are permitted each to make an independent CAF Phase II election, two of the four, ACS of Alaska and ACS of the Northland, would be forced to make a statewide election, each for two very different study areas. ACS of Alaska serves the diverse Juneau study area and the very sparsely populated Greatland study area.<sup>42</sup> ACS of the Northland serves the Glacier State study area and the extremely remote communities of the Sitka study area.<sup>43</sup>

By permitting ACS to make its CAF Phase II election on a study area-specific basis, the Commission would maximize its opportunity to meet the broadband deployment goals of the *Transformation Order*. In contrast, the statewide acceptance requirement contained in the rules today would discourage, and could prevent, ACS from

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<sup>42</sup> Within the ACS of Alaska operating company, the Juneau study area has 13,055 locations spread over 1,055 square miles, whereas the Greatland study area has 1,027 locations spread over 1,225 square miles. *See Connect America Fund; Procedures Relating To Areas Eligible For Funding And Election To Make A Statewide Commitment In Phase II Of the Connect America Fund*, Comments of Alaska Communications Systems, WC Docket No. 10-90, Comments of Alaska Communications Systems (filed Feb. 19, 2013), at 15-16.

<sup>43</sup> Within ACS of the Northland, only the Glacier State study area is connected by fiber to Anchorage; the 49 bush communities of the Sitka study area rely on satellite or terrestrial point-to-point microwave middle-mile connectivity. While some of these study areas are in census blocks that would qualify for the RAF instead of CAF Phase II support, a number of them are eligible for CAF II support under the Connect America Cost Model (“CACM”). ACS has demonstrated that the CACM fails to account for the transport costs associated with serving these areas, including undersea cable and terrestrial microwave costs, which would change the result for many census blocks served by the ACS ILECs. *See, e.g., Connect America Fund*, WC Docket No. 10-90, Comments of ACS filed July 9, 2012; Letter from Karen Brinkmann, Counsel for ACS, to Marlene H. Dortch, FCC Secretary, WC Docket Nos. 10-90 and 05-337, filed Feb. 13, 2012.

accepting any CAF Phase II support, even though there may be study areas where, on a standalone basis, it could achieve the required levels of broadband availability.

**3. Only those Census Blocks that the CACM Shows Are Eligible for CAF Phase II Support Should Be Included in the Service Commitments of Non-CONUS Carriers**

In addition, the Commission should confirm, whether or not it permits non-CONUS carriers to elect CAF Phase II support on a study area-specific basis, that the *area* to which any CAF Phase II broadband service commitment applies will be those census blocks (within the state or study area, as applicable) that the CACM indicate are eligible for CAF Phase II support. The Commission should do so whether or not it uses the CACM to determine the precise *level* of CAF Phase II support available to the non-CONUS carriers in those census blocks. The Commission has recognized that these “highest cost areas are more appropriately served through alternative approaches,”<sup>44</sup> in order “to maximize the number of expensive-to-serve residences, businesses, and community anchor institutions” that will benefit from CAF Phase II.<sup>45</sup> The \$1.8 billion CAF Phase II budget is not large enough to support customers that the CACM would place within the realm of the RAF, and was never designed to do so.

**IV. Other Matters**

**A. Validity of Input Data**

In the Public Notice, the Bureau asks, if it were to incorporate aspects of the models offered by ACS and other non-CONUS carriers into the CACM, how it could ensure that the inputs utilized reflect the costs of an efficient provider, rather than current

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<sup>44</sup> *Transformation Order* at ¶ 168.

<sup>45</sup> *Id.* at ¶ 167; *see also, id.* at ¶ 533 *et seq.*

embedded costs.<sup>46</sup> As a threshold matter, ACS observes that these two alternatives are not mutually exclusive. ACS believes that, facing capped end user rates, declining intercarrier rates, and frozen universal service support, no price cap carrier would choose inefficient investments.

Further, the transport cost inputs offered by ACS in its February 2012 model are on equal footing with the existing inputs already incorporated into the CACM. The record in this proceeding confirms that the inputs used in the CQBAT model, and apparently retained in the CACM, were “based on inputs provided by the [ABC] Coalition” and that, “[m]ost inputs represent an average value from across coalition members.”<sup>47</sup> ACS understands that those inputs were developed based on actual cost data provided by the original members of the ABC Coalition, using information supplied by their respective network planning and engineering departments.

Like the ABC Coalition, ACS developed its transport cost inputs based on estimates of the costs ACS would incur to build the necessary facilities today. Thus, of necessity, the results are forward-looking and represent those that would need to be incurred by an efficient provider. Particularly in Alaska, because broadband deployment lags the rest of the nation, ACS will need to build substantial new facilities to meet the Commission’s broadband deployment goals. Thus, its transport inputs reflect the costs ACS would incur to deploy facilities today, as an efficient provider, based on current network technology and designs, not legacy book costs of older facilities. These costs

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<sup>46</sup> Public Notice at ¶ 9.

<sup>47</sup> See, e.g., *Connect America Fund*, WC Docket No. 10-90, CostQuest Associates, “CAF2 Model Overview,” Part 1, *presented at* Connect America Phase II Cost Model Workshop, Sept. 13, 2012, at 137.

are, by nature, forward looking, based on the actual costs ACS would incur as an efficient provider today.

In any event, ACS believes that, when using a cost model to allocate a fixed universal service fund, it is more important that the inputs for each carrier be developed on a similar basis, in order to permit the model to generate meaningful cost comparisons, than it is to develop inputs using a specific methodology.

The CACM inputs would need to undergo two fundamental adjustments if they were going to reflect properly the costs ACS faces in Alaska, in a manner that permits meaningful comparisons to those faced by carriers in the contiguous United States. First, the inputs for costs that are included in the CACM need to be adjusted to reflect the higher costs ACS faces to build and operate equivalent infrastructure in Alaska, as compared to those in the contiguous states. Second, the model must be modified to include categories of costs, such as broadband transport within the state and between Alaska and its nearest Internet access points located in the contiguous United States. These costs should be incorporated into the model, either through the creation of additional inputs to reflect these cost categories, or through adjustments to existing model inputs to reflect the additional costs.

**B. The Commission Should Not Redirect Unused CAF Phase I Incremental Support to CAF Phase II**

In the Public Notice, the Bureau seeks comment on whether the Commission should use some or all of the unused 2012 CAF Phase I incremental support funds to

maintain existing support levels for carriers that serve areas outside the contiguous United States.<sup>48</sup>

ACS urges the Commission to reject this idea. As the Public Notice observes, the Commission recently sought comment on whether to use some or all of the unused 2012 CAF Phase I incremental support funds to enlarge the budget for CAF Phase II.<sup>49</sup> As ACS argued then, unused 2012 CAF Phase I incremental support should be made available as part of the Commission's 2013 round of CAF Phase I incremental support.<sup>50</sup> It remains critically needed to fulfill the Commission's goals for that interim mechanism to "begin[] the process of closing the rural-rural divide by directing additional funds to areas served by price cap carriers in a manner consistent with our overall budget goals and the more limited purpose of Phase I."<sup>51</sup> That support remains available to fulfill its intended purpose.

Further, there is an apparent temporal mismatch between the unused CAF Phase I incremental support and the CAF Phase II mechanism to which it would be transferred. The \$185 million in unused CAF Phase I incremental support was originally budgeted for distribution in 2012, for use over the following three years. The Commission has structured CAF Phase II, in contrast, as a five-year program, which will require annual funding. ACS would strongly oppose limiting CAF Phase II support for non-CONUS price cap carriers to \$185 million over *five* years, equating to an aggregate of roughly \$37

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<sup>48</sup> Public Notice at ¶ 12.

<sup>49</sup> *Id.*

<sup>50</sup> *Connect America Fund*, WC Docket No. 10-90, Comments of Alaska Communications Systems (filed Jan. 28, 2013), at 6.

<sup>51</sup> *Transformation Order* at ¶ 128, n. 201.

million per year for the non-CONUS carriers. Support at that level would plainly be insufficient to meet the requirements of Section 254(b), and could not achieve the Commission's CAF Phase II broadband deployment goals for the areas served by these carriers. If the Commission were to modify the rules to reallocate this support to CAF Phase II, then ACS agrees that it should be directed to meet the needs, in part, of carriers serving areas outside the contiguous United States. Further, the Commission should supplement it with additional CAF Phase II funds to reach the levels of support for such carriers discussed in these ACS Comments.

**C. The Bureau Is Wrong to Conclude that CAF Phase II Issues Will Not Have a Significant Economic Impact on Small Entities**

The Initial Regulatory Flexibility Act Analysis ("IRFA") contained in the Public Notice incorrectly states that "[t]hese CAF Phase II issues are not anticipated to have a significant economic impact on small entities insofar as the results impact high-cost support amounts for price cap carriers. This is primarily because most (and perhaps all) of the affected carriers are not small entities."<sup>52</sup> Though it elected price cap regulation in order to gain much-needed flexibility in a highly competitive environment, ACS is not as large as the other price cap carriers. In fact, it is a small entity within the meaning of the Regulatory Flexibility Act. As the IRFA itself explains, a business falling with the NAICS code for "Wired Telecommunications Carriers" is considered small if it has 1,500 or fewer employees.<sup>53</sup> ACS, with roughly 800 aggregate employees across its ILECs and their affiliates, falls below this threshold. Further, to be considered "small" for purposes

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<sup>52</sup> Public Notice, Appendix (Initial Regulatory Flexibility Analysis) at ¶ 23.

<sup>53</sup> *Id.* at Appendix, ¶ 8.

of the Regulatory Flexibility Act, a business must not be “dominant in its field of operation”<sup>54</sup> ACS also meets this second prong of the test; as the IRFA explains, “[t]he SBA’s Office of Advocacy contends that, for RFA purposes, small incumbent LECs are not dominant in their field of operation because any such dominance is not ‘national’ in scope.”<sup>55</sup>

The Bureau also errs when it states that the choice of alternatives discussed in the Public Notice will not “systematically increase or decrease support for any particular group of entities and therefore any significant economic impact cannot necessarily be minimized through alternatives.”<sup>56</sup> In fact, the CACM systematically reduces support for three of the non-CONUS price cap carriers, while substantially increasing support for the other price cap companies as a whole, including most of them individually. There are a number of ways the Bureau could minimize the economic impact, several of which ACS has identified in these Comments.

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<sup>54</sup> 5 U.S.C. § 601(3).

<sup>55</sup> Public Notice at Appendix, ¶ 9.

<sup>56</sup> *Id.* at Appendix, ¶ 23.

**V. Conclusion**

For the foregoing reasons, ACS hereby requests that the Commission adopt policies and processes to govern the availability of CAF Phase II support for carriers that serve areas outside the contiguous United States, as discussed herein.

Respectfully submitted,

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# Exhibit A

Alaska Communications Systems, CAF II Model, FCC Workshop (Sept. 13-14, 2012),  
available at: [http://transition.fcc.gov/wcb/tapd/universal\\_service/caf/CAF2-Alaska.pdf](http://transition.fcc.gov/wcb/tapd/universal_service/caf/CAF2-Alaska.pdf)

# Alaska Communications

CAF II Model  
FCC Workshop  
September 13-14, 2012

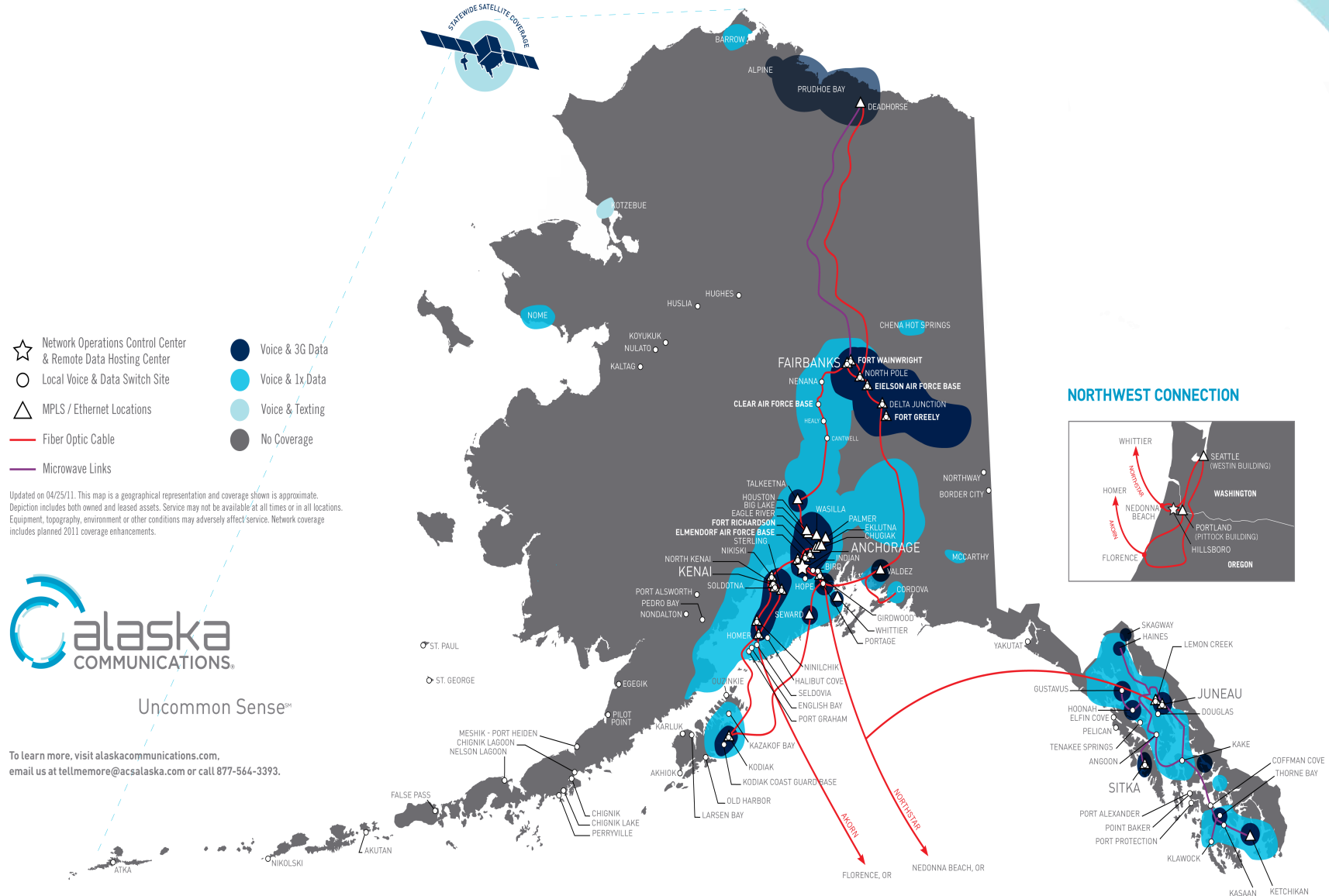
David Blessing, Economic Consultant, PARRISH BLESSING & ASSOCIATES, INC.  
Karen Brinkmann, Managing Member, KAREN BRINKMANN PLLC  
Richard Cameron, Assistant Vice President, ALASKA COMMUNICATIONS



# Alaska Communications Systems

- ACS operates four ILECs in six study areas, serving about 120,000 access lines, down from a peak of about 257,000 in 2001
  - More than half are in the Anchorage study area, the remainder distributed across five rural study areas
  - ACS central offices serve anywhere from 12 to 23,000 households, but 75% of its local serving areas serve fewer than 1,000 households
  - More than half of ACS's local serving areas are in the Alaska "Bush" not reachable by road
  - The ACS ILECs will receive about \$19 million in frozen support this year
- ACS provides backhaul connectivity to other carriers, such as mobile telecommunications and broadband service providers, in many parts of the state
- ACS also operates two submarine cables providing long-distance voice and broadband connectivity between Alaska and the nearest Internet access points in Oregon and Washington state

# Alaska Communications Service Territory



# Why an ACS Model?

- FCC modeling process is intended to estimate forward-looking costs, at a granular level, for efficient wireline-based providers to deploy, operate and maintain fixed voice and broadband networks in high-cost areas, including Alaska
- If the model adopted cannot accurately predict the costs of serving remote and insular areas such as Alaska, and ensure sufficient support, the Bureau may exempt such areas from CAF Phase II
- ACS believes that Alaska-specific costs have not been captured, and that current modeling underestimates support for ACS LECs
- ACS cannot meet increased obligations with reduced support under CAF II

# Major Cost Differentials Affecting Broadband Deployment in Alaska

- Lack of middle mile connectivity to many communities
- Distance to nearest network aggregation point
- Distance to nearest Internet access point (out of state)
- Geographic scale -- loop lengths and cost of transport
- Lack of road access
- Lack of power access
- Sparse population
- Short construction season
- Terrain & weather
- Labor constraints
- Take rate in Alaska

# ACS Has Undertaken To Model Costs Not Captured By CQBAT Model

- Utility of cost model depends on its ability to capture variations in cost between companies and between locations
- ACS modeled major categories of costs not captured by CQBAT Model:
  - CQBAT assumes fiber-based middle mile transport, many AK locations dependent on satellite or microwave for middle mile
  - CQBAT assumes a regional Internet access point within the same LATA as the ILEC; all traffic originating in Alaska must be transported 2,000 miles or more by undersea cable to nearest Internet access point in Washington or Oregon
  - CQBAT assumes ubiquitous road system, power grid; many off-road AK locations impacted by higher installation & maintenance costs
- Additional work is needed to model Alaska-specific differences in a number of input variables, including:
  - Loops and fiber transport
  - Central office equipment (*e.g.*, switches in very remote locations)
  - Installation and maintenance costs
  - Labor costs

# Alaska-Specific Cost Variables

## Modeled by ACS

- Middle mile transport (from the SWC to the nearest network aggregation point on a fiber ring) via non-fiber based facilities modeled by ACS
  - In 63% of the communities served by ACS, point-to-point microwave or satellite required for transport
  - Lack of roads and power also a factor
  - Relatively few customers per link affect per-customer cost of middle mile transport
  - Costs generally exceed those of fiber-based middle mile in Lower 48



# Alaska-Specific Cost Variables

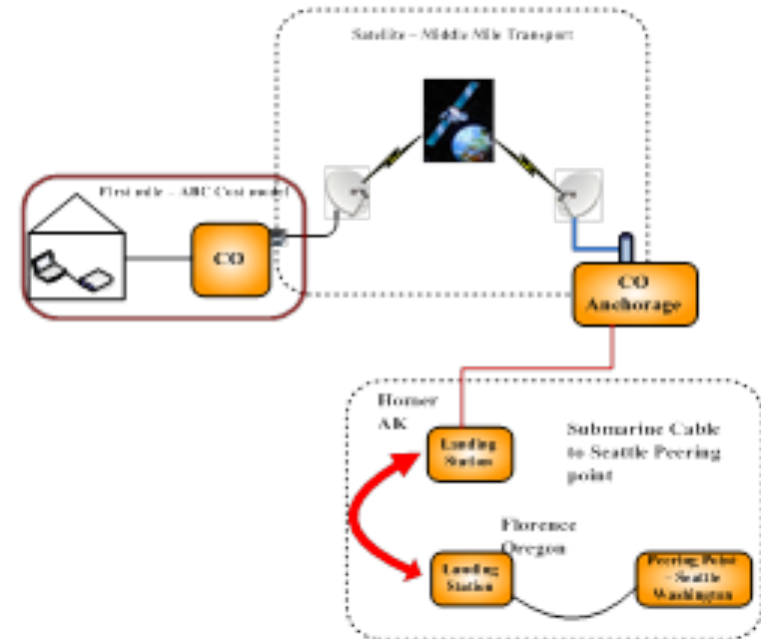
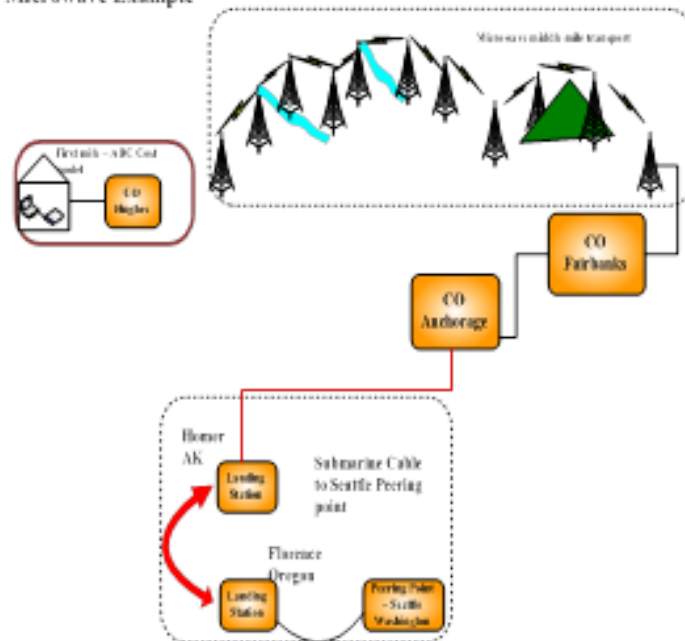
## Modeled by ACS, continued

- Broadband transport costs modeled by ACS from nearest network aggregation point in Anchorage or Juneau to the nearest Internet access point in Oregon or Washington state
  - CQBAT assumes an Internet access point at the regional BOC tandem in the same LATA
  - Alaska is not part of any LATA, and has no tandem
  - Transport of Internet traffic by undersea fiber optic cable is a cost only for broadband providers serving insular areas such as Alaska

# ACS Network Design

Satellite Example

Microwave Example



September 13-14, 2012

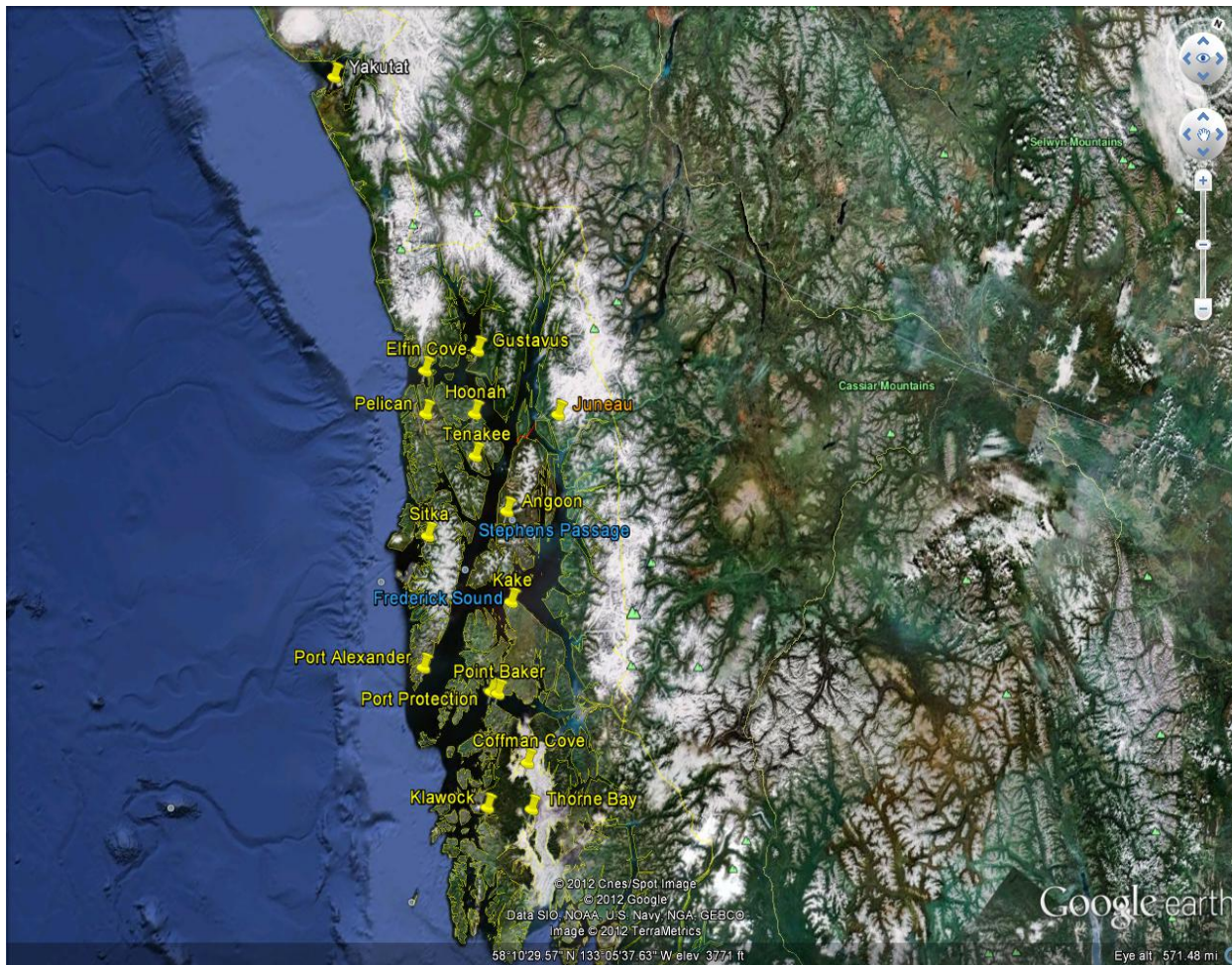
# Alaska-Specific Cost Variables Yet To Be Modeled

- Above-average equipment, labor, transportation and energy costs
  - Many network sites are accessible only by air or heavy equipment; cost of diesel fuel alone can run \$5 to \$20 per gallon
  - Access to Nikolski, in the Aleutians, is only by air, via Dutch Harbor (double hop) from Anchorage – ACS has scheduled 5 service visits this year, and has been unable to reach the village due to weather and flight unavailability – at a cost of \$54K and an average of 5 days per attempt, without reaching the destination
  - Replacing a single cable in Port Heiden cost \$44K, required freighting materials and tools from Anchorage, diesel at \$7 per gallon for heavy equipment, flying technicians (double hop) from Anchorage

# Alaska-Specific Cost Variables Yet To Be Modeled, continued

- In Southeast Alaska, labor costs significantly add to the cost of facilities deployment and maintenance
  - Routine service visit to a remote site in southeast Alaska requires on average 21 hours beyond normal service call in Juneau or Sitka
  - 100 service visits to remote communities in southeast Alaska in first 8 months of 2012 required 2,100 labor hours above what would have been required in Juneau or Sitka; 2,800 extra hours forecasted for all of CY 2012
  - Work time required varies widely depending on weather (accessibility), time of year (short construction season), communications (lack of wireless coverage), access to materials (remote shipment)

# ACS in Southeast Alaska



September 13-14, 2012

# Alaska-Specific Cost Variables Yet To Be Modeled, continued

- In southeast Alaska, ACS operates 15 exchanges serving an area about 200 by 400 miles with little road access
  - Exchanges configured with standalone CO, copper feeder and distribution cables, copper drops
  - Some exchanges rely on microwave, BETRs or Telular for local (last mile) distribution
  - Technicians in Juneau and Sitka reach remote SWC locations via aircraft plus small boat or ground transportation (4WD vehicle where roads exist, push cart for trails or boardwalk)
  - Regularly scheduled site visits subject to change due to severe weather conditions, larger-scale outages, staffing shortages
  - Installation and maintenance costs are increased 3-4 times on-road areas



# Alaska-Specific Cost Variables Yet To Be Modeled, continued

- Longer loop and transport lengths, on average, than in the Lower 48
  - Loop portion of CQBAT model captures network facilities from the customer location to a central office, assumes fiber last mile facilities from the customer to the serving Feeder Distribution Interface, and fiber second mile facilities from the FDI to the CO
  - FTTd costs higher in AK due to longer loop and second mile distances
  - Even where SWC accessible via road system, middle mile fiber transport distance to nearest regional fiber ring much greater than in Lower 48
- Above-average CO costs in very remote locations
  - Soft switches are not an option due to lack of fiber middle mile
  - DSLAMs, routers serving very sparse population, raising per-locations costs
- ACS conservatively estimates that thousands of additional locations in Alaska would exceed lower benchmark if Alaska-specific costs were reflected in modeling

# ACS Model – Methodology

- The goal of this first ACS model was to capture satellite, microwave and undersea cable costs
- The level of investment was calculated to reflect the FCC's requirements for speed, capacity and latency
- Assumptions about broadband take rates are significantly lower than those used by CQ, consistent with subscribership in AK
- Return on capital based on FCC default
- Capital recovery based on FCC depreciation parameters



# ACS Model – Methodology, continued

- ACS Model develops annual OpEx and CapEx factors to estimate the investment required and ratio of booked plant-specific expense to booked investment by plant category
  - Annual costs factors equal the ratio of expenses (by network function) to investment balance
  - Cost factors are applied to the estimated forward-looking investment balances to estimate forward-looking operating costs
  - Cost factors based on Part 32 Account Balance with ability to modify any factor calculation
- Expected broadband demand (customer locations multiplied by expected take rate) is divided into total annual cost to yield the per-customer cost

# ACS Model – Methodology, continued

- The following inputs were developed:
  - Required bandwidth capacity at each local serving area
  - Customer location count, including business factor, for each local serving area:
    - U.S. Census Bureau household data, together with company records, used to determine the residential customer locations for each area
    - Number of business locations estimated based on company records and residential counts
  - Annual operating cost factors (carrying charges) used to develop forward-looking plant-specific operating costs
  - Middle mile (non-fiber) costs for areas not on road system
  - Long-haul transport cost to L48 Internet access point

# ACS Model – Methodology, continued

- Middle mile transport (terrestrial fiber, microwave or satellite) chosen by ACS engineers based on most efficient configuration:
  - Satellite cost based on lease rate recently negotiated by ACS plus the estimated forward-looking cost required to provision the equipment necessary to bring the signal from the earth station to CO
  - Microwave cost includes required equipment and installation expressed on a per-unit basis (per foot, per port, etc.)
    - For each local service area where microwave transport is selected, ACS engineers quantified the costs of materials and equipment required to provision microwave transport at required bandwidth capacities
    - Equipment costs reflect purchase costs that assume all applicable ACS discounts plus installation costs
    - Installation costs include both contract/vendor labor costs, as well as allowances for Company engineering and technician time
  - In some communities, a combination of fiber and short haul marine cable is the most efficient configuration

# ACS Model – Methodology, continued

- Internet Transport:
  - Bringing traffic from Alaska to the nearest Internet access point requires routes over undersea cables that connect Alaska to the Lower 48
  - Efficient network configuration requires redundant routing -- ACS model includes the costs needed to utilize undersea cables terminating in Seattle and Portland
  - Relevant costs of these facilities include undersea cable capacity to and including landing stations, as well as terrestrial fiber transmission from coastal landing stations to IAP in Seattle or Portland
  - Capacity requirements based on assumptions consistent with FCC rules:
    - 4 Mbps downstream and 1 Mbps upstream speeds
    - number of customer locations multiplied by take rate consistent with ACS experience
- Using CapEx, OpEx data from current ACS undersea cable records, ACS identified cost of provisioning and operating undersea cables capable of handling the required minimum capacity requirements

# ACS Model - Results

- The ACS Model produces output down to the census block level including:
  - Number households (customer locations)
  - Expected number of broadband customers
  - Required middle mile transport connection
  - Cost per location of middle mile transport
  - Cost per location of undersea cable transport
  - Total forward-looking broadband costs per location

# ACS Model – Results, continued

- The ACS Model indicates that costs to provide broadband service to unserved locations in ACS ILEC serving areas will exceed the costs estimated in the CQBAT model by a significant margin, in a number of locations by as much as several thousand dollars
- ACS estimates that the total cost to bring broadband to all unserved customer locations in ACS ILEC serving areas will be at least \$75 to \$100 million

# Achieving Useful Model Outcomes

1. Unique Alaska circumstances must be included in the cost variables modeled for Alaska ILECs
  - non-fiber-based middle mile transport
  - undersea cable-based Internet
  - take rates reflective of actual market conditions
2. Algorithms and input variables employed in the model must be capable of reflecting differences in costs experienced in insular locations – For insular areas, area specific model superior to nation-wide model
3. Model must be transparent as to the assumptions, computations and inputs used
4. Parties must have real-time access to the model to verify outputs, change assumptions and run alternative inputs
5. The results of the model must be reasonable or the model itself cannot be deemed reasonable

# Transparency

- All data, assumptions and computations should be provided so as to be verifiable
- Parties should be able to change input variables, test assumptions, and run sensitivity tests in real time, for example:
  - Changing loop lengths
  - Changing the technology (such as from fiber to microwave or satellite)
  - Changing engineering assumptions
  - Changing depreciation assumptions
- Parties should have access to source information for cost inputs (for equipment, the brand, model, capacity, age, and utilization rate)
- Parties should have the ability to evaluate changes in input variables such as:
  - Equipment cost input values
  - Labor rates and loadings
  - Cost of capital



# Observations

- The ability of any national model to accurately estimate costs for Alaska is subject to the reasonableness of the input variables, including Alaska-specific costs for equipment acquisition, installation and maintenance
- In addition, any national model must be capable of accounting for unique regional features, such as long-haul fiber transport routes prevalent in Alaska
- ACS is receiving \$19 million per year in high-cost support – the CQBAT model would *reduce* that by about \$12 million per year, and eliminate it at the end of 5 years
  - Support for Alaska, Puerto Rico and the US Virgin Islands collectively would drop from \$57.9 million to \$8.8 million per year
- At the same time, LECs will be expected to increase broadband deployment to 85% of unserved locations in 3 years, and 100% of unserved locations in 5 years
- ACS estimates that the real cost of meeting this goal in the unserved portions of its LEC service territories is at least \$75 to \$100 million; another \$50 to \$75 million would be required to bring the FCC's target speeds to underserved locations
- If a model produces unreasonable results, the model cannot be deemed reasonable



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